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| 10/643,908   | 08/20/2003  | Masayuki Nakayasu    | 0425-1069P          | 4752             |
| 2292   | 7590        | 06/22/2005           | EXAMINER            |                  |
| BIRCH STEWART KOLASCH & BIRCH<br>PO BOX 747<br>FALLS CHURCH, VA 22040-0747 |             |                      | ENGLISH, PETER C    |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 3616                |                  |

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/643,908

Applicant(s)

NAKAYASU ET AL.

Examiner

Peter C. English

Art Unit

3616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20031119</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Preliminary Amendment*

1. The preliminary amendment filed on 20 August 2003 has been entered.

### *Drawings*

2. The drawings are objected to because:

In Fig. 1, the view label "Fig. 1" should be oriented in the same direction as the view itself.

Figs. 1-4, 6 and 8 should include appropriate cross-hatching for elements shown in cross-section.

In Fig. 2, reference number 29 should be changed to a different number (e.g., 29a) since the structure of the burst disk in Fig. 2 differs from that in Fig. 1.

In Fig. 3, reference numbers 22 and 51 should be changed to different numbers (e.g., 22b, 51b) since the structure of the gas introducing chamber and first housing in Fig. 3 differs from that in Fig. 1.

In Fig. 8, reference numbers 22 and 51 should be changed to different numbers (e.g., 22f, 51f) since the structure of the gas introducing chamber and first housing in Fig. 8 differs from that in Fig. 1.

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. The lengthy specification has not been checked to the extent to identify every minor error. Applicant's cooperation is requested in insuring that the specification is in good form for publication.

5. The specification is objected to because:

The reference numbers appearing on pages 2 and 3 of the specification should be deleted since the drawings do not contain "prior art" figures illustrating the invention described in JP 2002-172995. Note that some of the reference numbers appearing on pages 2 and 3 are actually used to designate elements of applicant's invention as it is illustrated in the drawings.

All references to the claims should be deleted from the "Disclosure of the Invention" since claims are subject to amendment and cancellation. See page 3, line 21; page 5, line 17; page 7, line 7; page 8, line 26; page 10, line 15; page 12, line 11; page 13, line 25; page 15, line 11; and page 16, lines 9 and 13.

At page 21, line 14, "51" should be "52".

Pages 23-27 and 32-33 should be amended in accordance with the corrections made to Figs. 2, 3 and 8 (see item 2 above). Note that reference number 51 is not used in the description of Fig. 3.

Appropriate correction is required.

***Claim Objections***

6. Claims 9-12 are objected to under 37 CFR 1.75(c) as being improper multiple dependent claims because a multiple dependent claim cannot depend from another multiple dependent claim. See MPEP § 608.01(n). Accordingly, claims 9-12 are not further treated on the merits in this Office action.

7. Claims 1-8 are objected to because:

In claim 1, lines 7-10 are grammatically incorrect and awkward.

In claim 1, at line 15, "ruptruable" should be "rupturable".

In claim 4, at line 18, "to" should be "toward".

In claim 5, at lines 11 and 15, “is” should be inserted after “which”.

In claim 6, at lines 11 and 14, “is” should be inserted after “which”.

In claims 7 and 8, at line 11, “is” should be inserted after “which”.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

8. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-8 are REplete with indefinite language. Examples are provided below. A thorough revision of all pending claims is required.

In claim 1, at line 2, “the other end opened” is indefinite because it fails to accurately describe the inflator housing. The diffuser 20 with the burst disk 29 closes the end of the housing and therefore the end is not “opened”.

In claim 1, “the opening portion” (line 3), “the center” (line 8), “the time of activation” (line 9), “the axial direction” (line 13) and “the opposite position” (line 14) lack proper antecedent basis.

In claim 1, at line 6, “flat plate-like” is indefinite because it fails to accurately describe the burst disk 29, which as shown in Fig. 1 has a domed shape. Further, “plate-like” is indefinite because the addition of the word “like” to an otherwise definite expression extends the scope of the expression so as to render it indefinite.

In claim 1, at line 7, it is unclear what relationship is defined by the unconventional term “reaching”.

In claim 1, at line 7, it is unclear which element of the claimed invention “whose” refers to.

In claim 2, “the central axis of the rupturable plate” (lines 2-3) and “the central axis of the actuating portion” (lines 3-4) lack proper antecedent basis.

In claim 3, at lines 2-3, “for introducing the pressurized gas inside the inflator housing” is indefinite because it fails to specify what the pressurized gas is “introduced” into. This language inaccurately implies that the pressurized gas is introduced into a different element than the diffuser portion.

In claim 3, at lines 9-10, “formed in the axial direction of the inflator housing” is indefinite because it inaccurately suggests that the gas introducing chamber is in the inflator housing.

In claim 3, “the direction orthogonal to...” (lines 12-13) and “the igniter accommodating chamber side” (lines 17-18) lack proper antecedent basis.

In claim 3, at lines 14-15, “which is in communication with the outside of the inflator before mounting the igniter” is indefinite because it defines the inflator as it exists in an intermediate step of its manufacture. This language does not accurately describe the inflator in its final form.

In claim 3, at lines 16-17, “is inserted from the opening portion of the igniter accommodating chamber” is indefinite because it is unclear how much weight should be given to such a method step in a claim directed to an article of manufacture.

In claim 3, at lines 18-20, “the gas discharging passage which communicates the igniter accommodating chamber with the gas introducing chamber” is indefinite because it contradicts lines 5-6 of claim 3.

In claim 4, at lines 2-3, “for introducing the pressurized gas inside the inflator housing” is indefinite because it fails to specify what the pressurized gas is “introduced” into. This language inaccurately implies that the pressurized gas is introduced into a different element than the diffuser portion.

In claim 4, at lines 9-10, “formed in the axial direction of the inflator housing” is indefinite because it inaccurately suggests that the gas introducing chamber is in the inflator housing.

In claim 4, “the direction orthogonal to...” (lines 12-13) lacks proper antecedent basis.

In claim 4, at lines 14-15, “which is in communication with the outside of the inflator before mounting the igniter” is indefinite because it defines the inflator as it exists in an intermediate step of its manufacture. This language does not accurately describe the inflator in its final form.

In claim 4, at lines 18-19, “a side surface of the cup forms the rupturable plate” contradicts the description of the rupturable plate in claim 1, at line 6, where it is described as being “flat, plate-like”.

In claim 4, at lines 18-20, “the gas discharging passage which communicates the igniter accommodating chamber with the gas introducing chamber” is indefinite because it contradicts lines 5-6 of claim 4.

In claim 5, at lines 2-3, “for introducing the pressurized gas inside the inflator housing” is indefinite because it fails to specify what the pressurized gas is “introduced” into. This language inaccurately implies that the pressurized gas is introduced into a different element than the diffuser portion.

In claim 5, “the a direction orthogonal to...” (lines 9-10) and “the gas introducing chamber side” (line 18) lack proper antecedent basis.

In claim 5, at lines 15-16, “which is in communication with the outside of the inflator before mounting the igniter” is indefinite because it defines the inflator as it exists in an intermediate step of its manufacture. This language does not accurately describe the inflator in its final form.

In claim 5, at lines 17-18, “is inserted from the gas introducing chamber” is indefinite because it is unclear how much weight should be given to such a method step in a claim directed to an article of manufacture.

In claim 5, at lines 19-20, “the gas discharging passage which communicates the igniter accommodating chamber with the gas introducing chamber” is indefinite because it contradicts lines 5-6 of claim 5.

### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al. (US 3,642,304). Johnson et al. discloses an inflator comprising a diffuser 14 attached to an end of a cylindrical housing 4. The diffuser 14 includes a rupturable plate 40 and an igniter 44

located coaxial to one another and orthogonal to the longitudinal axis of the cylindrical housing 4 (see Fig. 2). The diffuser 14 includes discharge holes 38.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 3,642,304) in view of Storey et al. (US 5,588,670) and Cuevas et al. (US 5,593,180). Johnson et al. lacks a diffuser having an igniter chamber formed with the discharge holes, with the rupturable plate fixed to an annular fixture. Storey et al. teaches a diffuser 30 having an igniter chamber (see Fig. 5) that is formed with discharge holes 40. Cuevas et al. teaches a diffuser 22, 28 having an igniter chamber 104 that is formed with discharge holes 106, and a rupturable disk 142 fixed to an annular fixture 28. From these teachings of Storey et al. and Cuevas et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Johnson et al. by providing the diffuser with an igniter chamber formed with the discharge holes, with the rupturable plate fixed to an annular fixture, because



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this provides for a more compact construction of the diffuser, thereby minimizing the space requirements of the inflator.

***Allowable Subject Matter***

14. Claims 4, 6 and 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Smith et al., Metzger and Katsuda et al. teach inflators with igniters and/or rupturable plates located orthogonal to an inflator housing. Connell teaches a valve including an igniter and a rupturable plate located orthogonal to a gas passage.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter C. English whose telephone number is 571-272-6671. The examiner can normally be reached on Monday through Thursday (7:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on 571-272-6669. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Peter C. English  
Primary Examiner  
Art Unit 3616